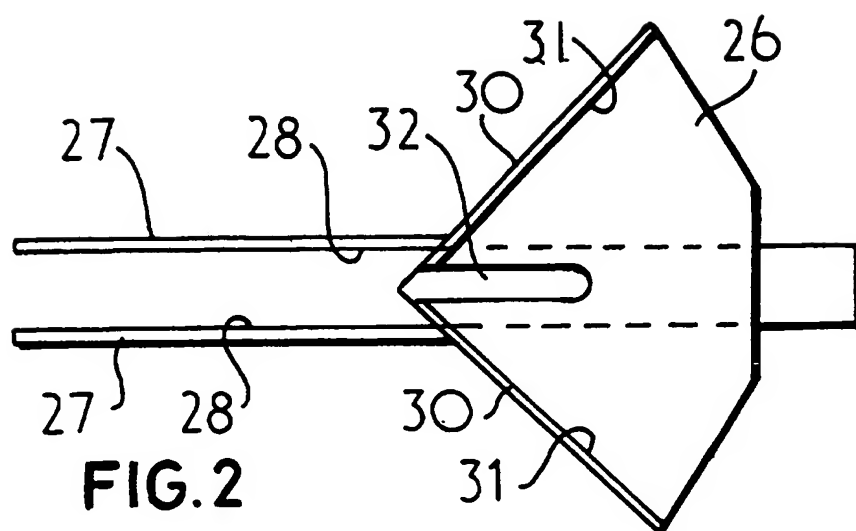
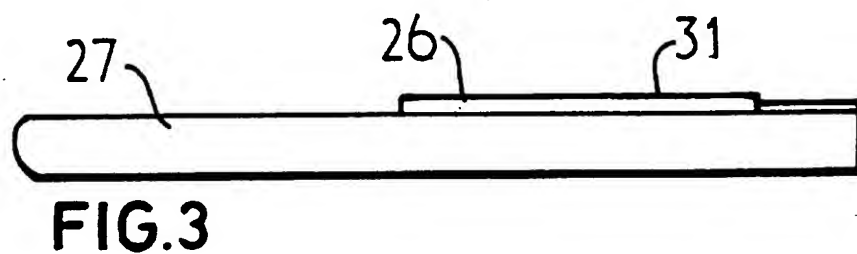
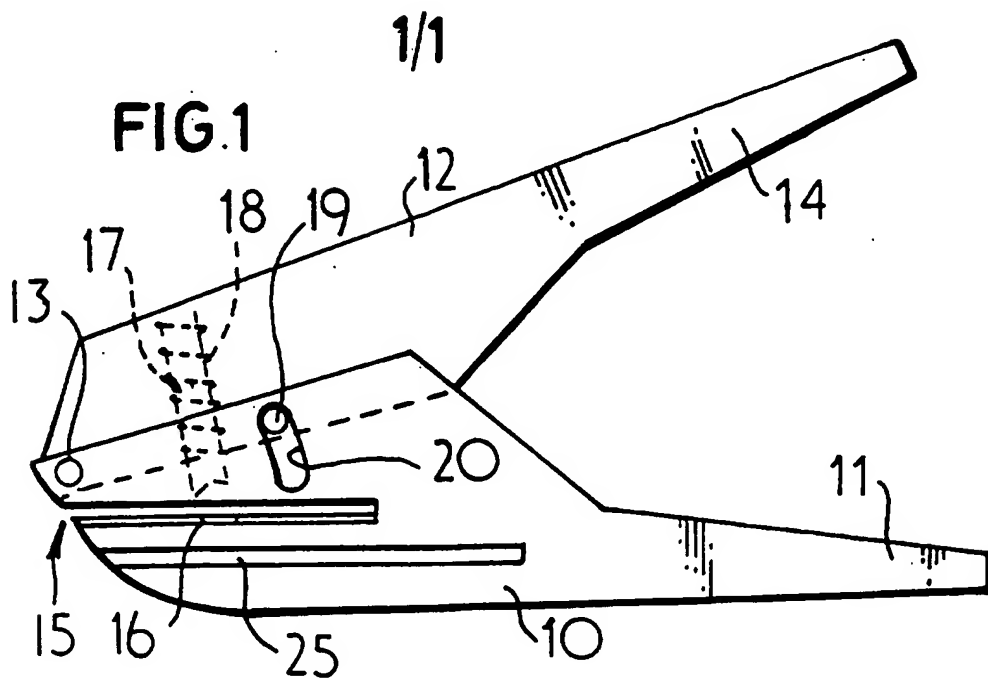


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HOLE PUNCHER

This invention relates to a hole puncher, arranged for punching a hole through the corner region of one sheet, or several sheets, of paper.

In all manner of businesses, papers such as copies
5 of correspondence are kept on files which frequently have a pin or tag arranged in a corner region, so that the papers may be held by that pin or tag. A hole may be pre-punched through the paper before the paper is placed on the file, but not infrequently the pin or tag
10 is used to create a hole through the paper. Unless a large number of sheets are to be placed on the file at the same time, in which case a relatively large desk-mounted punch may be employed to produce the hole, individual sheets of paper are often punched using a
15 hand-held and operated hole puncher able to accommodate typically up to about 10 sheets at a time.

A disadvantage associated with the use of a hand-held hole puncher, or using the pin or tag of the file to create the required hole through the paper to be
20 filed, is that the hole in any one sheet will be produced at an indeterminate position though still generally in the corner region of the paper. The hole will be punched wherever the operator happens to position the hole puncher, and the holes in successive
25 sheets added to the file will be in significantly varying positions: the hole punched in one piece is

unlikely to correspond to the position of the holes punched in previously filed pieces of paper.

As the corners of the pieces of paper added to the file will not be aligned, the corners of the sheets will overhang each other. If several papers are removed from the file to gain access to an underlying sheet, it is then difficult to replace those papers other than by placing the sheets one at a time back on the file. Moreover, there is a tendency for the sheets to become creased and the corner regions damaged. Also, the paper between the edge of a sheet and its hole is likely to become torn, whereafter that sheet will become detached from the pin or tag. Following that, the sheet may be lost or mislaid.

It is a principal aim of the present invention to provide a hole puncher arranged to facilitate the punching of a hole in one sheet, or a few sheets at the same time, at a predefined position relative to the corner of the sheet or sheets.

According to the present invention there is provided a manually operable hole puncher for punching a hole in the corner region of a piece of paper, which hole puncher comprises a co-operable punch and die set and guide means for the corner region of a piece of paper to be punched, the guide means including at least first and second abutments arranged for respective engagement with the two adjacent edges of the corner

region of a piece of paper to be punched, whereby the positioning the paper so that the edges thereof engage the abutments predefines the position of the hole to be punched in the corner region of the piece of paper.

5 It will be appreciated that the guide means serves to ensure that a piece of paper is properly located within the throat of the hole puncher, between the punch and die thereof, in a predefined position relative to the corner of that piece of paper so that
10 when the punch is operated, the hole is in a preset position. All sheets of paper punched with that hole puncher will have their respective holes in the same predefined position and so a file containing even large numbers of pieces of paper will still have all those
15 pieces properly aligned one with another.

 Most preferably, the abutments are formed on a plate arranged to extend in a plane perpendicular to the line of action of the punch and die set. Such a plate may have two edges formed mutually at right
20 angles said abutments upstanding from those edges. For example, the plate may be metallic and have said edges thereof turned through 90° so as thereby to define the abutments. Alternatively, the plate could be of a moulded plastics material in which case upstanding lips
25 extending along said edges may be moulded integrally with the plate.

In order to allow greater versatility, the plate may be detachably attached to the hole puncher, for example by means of a screw-threaded fastener. Alternatively, the plate may be provided with a pair of arms arranged resiliently to embrace a part of the hole puncher. In either case, the position of the plate may be adjustable with respect to the punch and die set so as to allow a variation in the predefined position at which a hole will be punched. Conveniently, an indexing arrangement may be provided, in order to allow a selection of the required predefined position.

The main parts of the hole puncher may be essentially conventional and so include a pair of handles pivoted together, the punch being connected to one handle and the die to the other handle for relative punching movement on squeezing together the two handles. In such a case, the plate may be attached to the same handle as is connected the die.

By way of example only, one specific embodiment of hole puncher arranged in accordance with the present invention will now be described in detail, reference being made to the accompanying drawings, in which:-

Figure 1 is a side view of a conventional form of hole puncher, modified to accommodate guide means according to this invention;

Figure 2 is a plan view of the guide means of this invention; and

Figure 3 is a side view of the guide means of Figure 2.

Referring initially to Figure 1, there is shown a conventional form of hole puncher intended to punch
5 holes through the corner region of one sheet, or a few sheets, of paper. The hole puncher has a main part 10 defining a first handle 11, a lever 12 being pivoted at 13 to the main part 10. The lever 12 defines a second handle 14 which is opposed to first handle 11. A
10 throat 15 is formed in the main part 10, and the lower surface of that throat defines a die 16 for co-operation with a punch 17 connected to the lever 12. A compression spring 18 is positioned over the punch 17 and acts between the main part 10 and the lever 12, to
15 urge apart the first and second handles 11 and 12. A transverse pin 19 is mounted in the lever 12 and slides in an arcuate slot 20 formed in the main part, to limit relative separating movement of the two handles.

As thus described, the hole puncher is entirely
20 conventional. On applying manual squeezing pressure to the first and second handles, the punch 17 crosses the throat 15 and enters the die 16. A hole will thereby be punched in paper located in the throat.

The hole puncher described above is modified to
25 allow the connection thereto of guide means for positioning paper to be punched. Two grooves 25 are formed one in each outer face of the main part 10, on

the side of the throat remote from the lever 12. A guide arrangement for paper has a plate 26 carrying a pair of spaced arms 27, which arms are arranged resiliently to embrace the outer faces of the main part 10 with the plate 26 transversely located in the throat 15 of the main part. Each arm has an inwardly directed rib 28 which is received in the associated groove 25, the arrangement being such that the position of the plate within the throat may be adjusted by relative sliding movement, the ribs 28 sliding along the grooves 25.

Though not shown, calibrations may be provided on the arms 27 and an index mark on the main part 10, whereby the precise position of the plate may be preset by alignment of the appropriate calibration with the index mark. To ensure the plate stays at a required setting, the inside face of one arm, or both arms, may be serrated, the serrations co-operating with a projection formed on the main part 10. Alternatively, a screw-threaded clamping arrangement may be provided to secure the arms in the required position.

The plate 26 has two edges 30 mutually at right angles, each of those edges having an upstanding lip 31. A slot 32 is formed in the plate from the corner between the two edges 30, which slot is of a sufficient width to accommodate the punch 17.

In use, the plate 26 is set at a required position for paper to be punched. One sheet, or a few sheets, of paper are then offered into the throat 15 so that the edges of the paper in the corner region thereof
5 about the lips 31 of the plate 26. The handles are squeezed together in the usual way, so producing holes at the precise required position.

Should the punch be required to punch a hole for example partway along the side of a piece of paper, the
10 guide means described above may be removed from the main part 10, so allowing the punch to be used in an entirely conventional manner.

CLAIMS

1. A manually operable hole puncher for punching a hole in the corner region of a piece of paper, which hole puncher comprises a co-operable punch and die set and guide means for the corner region of a piece of paper to be punched, the guide means including at least first and second abutments arranged for respective engagement with the two adjacent edges of the corner region of a piece of paper to be punched, whereby the positioning the paper so that the edges thereof engage the abutments pre-defines the position of the hole to be punched in the corner region of the piece of paper.
2. A hole puncher as claimed in claim 1, wherein the abutments are formed on a plate arranged to extend in a plane perpendicular to the line of action of the punch and die set.
3. A hole puncher as claimed in claim 2, wherein the plate has two edges formed mutually at right angles, said abutments upstanding from those edges.
4. A hole puncher as claimed in claim 3, wherein said edges of the plate are turned through 90° so as thereby to define the abutments.
5. A hole puncher as claimed in any of claims 2 to 4, wherein the plate is detachably attached to the remainder of the hole puncher.
6. A hole puncher as claimed in any of claims 2 to 5, wherein the hole puncher includes a pair of handles

pivoted together, the punch being connected to one handle and the die to the other handle for relative punching movement on squeezing the handles together.

7. A hole puncher as claimed in claim 6, wherein
5 the plate is attached to the same handle as is connected the die.

8. A hole puncher as claimed in claim 6 or claim 7, wherein the corner between the edges of the plate having said abutments is disposed on the centre line of
10 the length of the puncher, nearer the part of the handle to which squeezing force is applied than the punch itself.

9. A hole puncher as claimed in any of claims 2 to 8, wherein the position of the plate relative to the
15 punch and die set is adjustable.

10. A hole puncher as claimed in any of claims 2 to 9, wherein the plate is provided with a pair of spaced arms, a part of the hole puncher defining the punch and die set being located between and gripped by said arms.

20 11. A hole puncher as claimed in claim 1 and substantially as hereinbefore described, with reference to the accompanying drawings.



Application No: GB 9512862.5
Claims searched: 1-11

Examiner: Hal Young
Date of search: 28 August 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B4B ; B4W

Int Cl (Ed.6): B26D(7/00, 01) ; B26F(1/32, 36)

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB2224686 A (HOWARD) see figs 1,2 and lines 16-20 of page 1.	1-5
A	GB1537952 (ATSUO) see figs 1-3,12.	
X	GB1453017 (TOPPAN) see figs 1-3,5.	1
X	US5067242 (SINGER) see figs 1,2-4.	1

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
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P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.